

WHAT IS CLAIMED IS:

1. An image data processing apparatus comprising:
  - a dividing unit that divides image data into a plurality of blocks;
  - an extracting unit that extracts a feature index of a first color
  - 5 component and a feature index of a second color component in each of the blocks;
  - a registration unit that registers information about a correspondence between the feature index of the second color component and a change in the feature index for the first color
  - 10 component; and
  - a code embedding unit that embeds a predetermined code into the image data, by changing the feature index of the first color component based on the feature index of the second color component, using the information registered.
  - 15
2. The image data processing apparatus according to claim 1, wherein the code embedding unit embeds one code corresponding to a pair of blocks, based on a magnitude relationship between the feature indices of color components related to the pair of blocks.
- 20
3. The image data processing apparatus according to claim 1, wherein the registration unit registers information about a correspondence between the feature index of the second color component, a difference between the feature indices of the second
- 25 color component related to a pair of blocks, and the change in the

feature index for the first color component.

4. The image data processing apparatus according to claim 1,  
wherein the first color component is a yellow component.

5

5. The image data processing apparatus according to claim 4,  
wherein the second color component is a magenta component.

6. The image data processing apparatus according to claim 1,  
10 further comprising a code extracting unit that extracts the code  
embedded into the image data.

7. An image data processing method comprising:  
dividing image data into a plurality of blocks;  
15 extracting a feature index of a first color component and a  
feature index of a second color component in each of the blocks;  
registering information about a correspondence between the  
feature index of the second color component and a change in the  
feature index for the first color component; and  
20 embedding a predetermined code into the image data, by  
changing the feature index of the first color component based on the  
feature index of the second color component, using the information  
registered.

25

8. The image data processing method according to claim 7,  
wherein the embedding includes embedding one code corresponding to  
a pair of blocks, based on a magnitude relationship between the feature  
indices of the color components related to the pair of blocks.

5

9. The image data processing method according to claim 7,  
wherein the registering includes registering information about a  
correspondence between the feature index of the second color  
component, a difference between the feature indices of the second  
10 color component related to a pair of blocks, and the change in the  
feature index for the first color component.

10. The image data processing method according to claim 7,  
wherein the first color component is a yellow component.

15

11. The image data processing method according to claim 10,  
wherein the second color component is a magenta component.

12. The image data processing method according to claim 7, further  
20 comprising extracting the code embedded into the image data.

13. A computer program, making a computer execute:  
dividing image data into a plurality of blocks;  
extracting a feature index of a first color component and a  
25 feature index of a second color component in each of the blocks;

registering information about a correspondence between the feature index of a second color component and a change in the feature index for the first color component; and

- embedding a predetermined code into the image data, by
- 5 changing the feature index of the first color component based on the feature index of the second color component, using the information registered.

14. The computer program according to claim 13, wherein the
- 10 embedding includes embedding one code corresponding to a pair of blocks, based on a magnitude relationship between the feature indices of the color components related to the pair of blocks.

15. The computer program according to claim 13, wherein the
- 15 registering includes registering information about a correspondence between the feature index of the second color component, a difference between the feature indices of the second color component related to a pair of blocks, and the change in the feature index for the first color component.

20

16. The computer program according to claim 13, wherein the first color component is a yellow component.

25

17. The computer program according to claim 16, wherein the second color component is a magenta component.

18. The computer program according to claim 13, further making the  
5 computer execute extracting the code embedded into the image data.